



Hydropower Development



Brigadier General Alexander Mackenzie.

Office of History, Corps of Engineers

Libby Dam, Montana.



Public Affairs Office, Corps of Engineers

Since the turn of the 20th century, the U.S. Army Corps of Engineers has moved from a position opposing involvement in hydroelectric power to one of total endorsement. By 1900 Congress had already initiated partial federal control over dam-building. The Corps participated in the regulatory process but conceived its role narrowly.

In January 1905 Brigadier General Alexander Mackenzie, the Chief of Engineers, summed up the Corps' traditional views on the federal government's limited role in improving American waterways. Congress, he said, could legally "exercise control over the navigable waters of the United States . . . only to the extent necessary to protect, preserve, and improve free naviga-

tion." Mackenzie further maintained that nothing should be permitted to interfere with the central purpose of locks and dams—to facilitate navigation and commerce. All other interests were clearly secondary. These views fitted into the prevailing judicial interpretation of federal powers under the Constitution's commerce clause.

During the years following Mackenzie's pronouncements, attitudes gradually changed. The engineers became convinced that the escalation in private dam-building, largely for hydropower purposes, threatened to jeopardize their prerogatives in navigation work and they guarded those prerogatives jealously. While the federal government redefined its part in water

Generators at Bonneville Dam.

Public Affairs Office, Corps of Engineers



Public Affairs Office, Corps of Engineers

John Day Lock and Dam.

resources development, the Corps staked out its own territory. As an auxiliary to navigation and later to flood control, hydropower benefited by more liberal interpretations of federal authority. Cautiously, with frequent hesitation and some inconsistency, the engineers embraced the new philosophy. What began as a regulatory role in hydropower expanded to include much more. By mid-century, the Corps of Engineers emerged as the largest constructor and operator of federal power facilities.

The change in the engineers' role was dramatic by the end of the 1920s. By that time, they were heavily involved in surveying rivers for flood control, power and irrigation, as well as for navigation. Public power at multipurpose projects took hold during the New Deal and proliferated after World War II. In the mid-1950s, the Corps had more than 20 multipurpose projects under construction. By 1975 the energy produced by Corps hydroelectric facilities was 27 percent of the total hydroelectric power production in the United States and 4.4 percent of the electrical energy output from all sources. In 1987 the Corps was operating and maintaining 73 projects with hydropower facilities. The total capacity at Corps dams was about 20.1 million kilowatts. The largest hydropower dams built by the Corps are on the Columbia and Snake rivers in the Pacific Northwest. The biggest of these is the John Day on the Columbia River, which has a generating capacity of nearly 2.2 million kilowatts.

In 1951 the Chief of Engineers referred to the development of hydropower as "one of the most important aspects of water resource development." Further, he argued, "proper provisions for hydroelectric power development are an essential part of comprehensive planning for conservation and use of our river

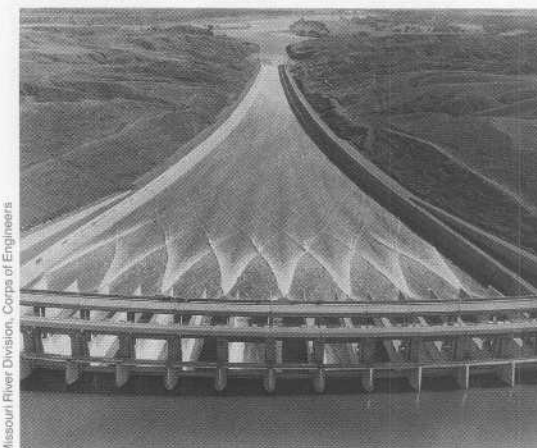
basins for the greatest public good." Nearly 20 years later, the Office of the Chief of Engineers reaffirmed its commitment, stating that "generation of hydroelectric power to serve the growing needs of the American people is a task the Corps welcomes." The Corps' turn-about and its expanding mission in hydroelectric power development were a significant part of the organization's history in the first six decades of the 20th century. Today, the Corps continues to operate, maintain, and occasionally add capacity at existing hydroelectric plants.



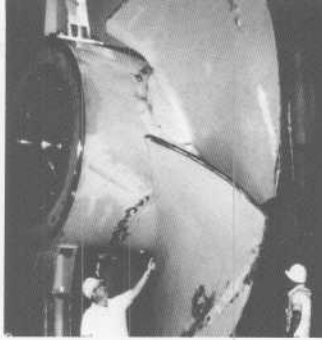
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Clark Hill Lake and Dam, Savannah River, Georgia and South Carolina.

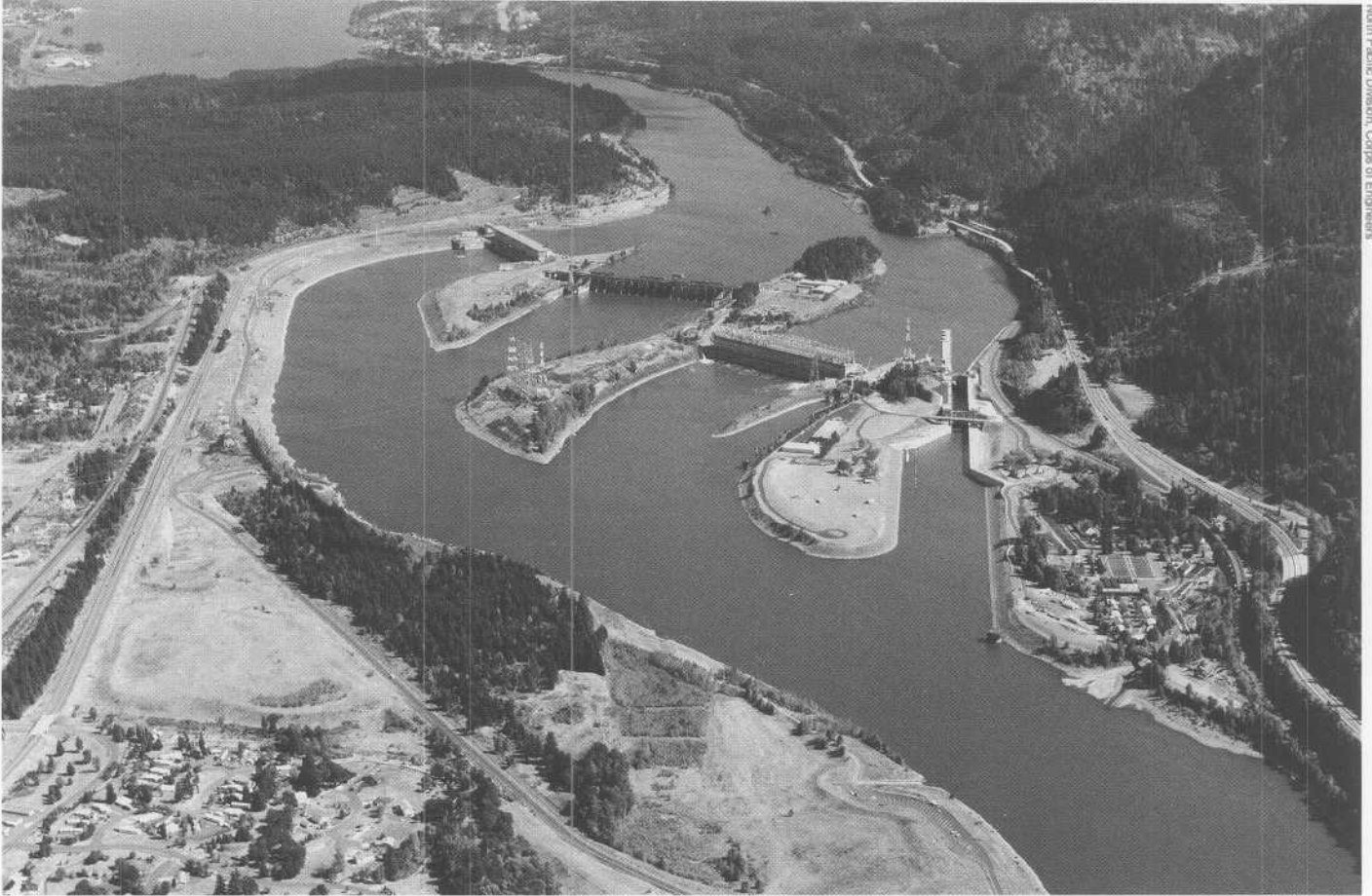
Fort Peck Spillway, Montana.



Missouri River Division, Corps of Engineers



Power house turbine blade under repair.



Bonneville Dam on the Columbia River, Oregon and Washington.

Powerhouse construction, Richard B. Russell Dam on the Savannah River, 1982.

